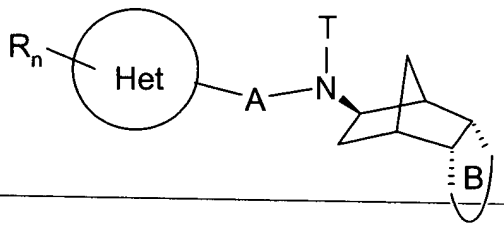
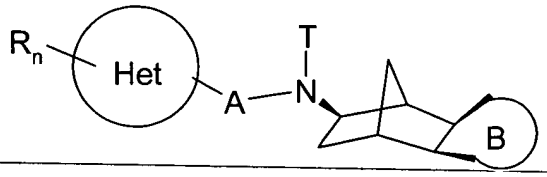
We claim:

1. A substituted heterocyclo-norbornylamino derivative having an exo-configuration nitrogen and endo-fused five-membered or six-membered ring of the formula I or having an exo-configuration nitrogen and exo-fused five-membered or six-membered ring of the formula I a,

I



I a



wherein:

A is (C_1-C_4)- alkylene;

T is (C_1-C_4)- alkyl or H;

B is a saturated or unsaturated carbon five-membered or six-membered ring, which is unsubstituted or is substituted by 1-3 substituents chosen from oxo, hydroxyl, (C_1-C_4)- alkoxy, and (C_1-C_4)- alkyl;

Het is a 5- or 6-membered, saturated or unsaturated, heterocycle that contains up to four identical or different heteroatoms chosen from O, S, N, and Se;

R is OH, F, Cl, Br, I, CN, NO_2, phenyl, CO_2R1, (C_1-C_4)- alkyl, (C_1-C_4)- alkoxy, amino, (C_1-C_4)- alkylamino, di(C_1-C_4)- alkylamino, or amino-(C_1-C_4)- alkyl,

wherein the alkyl radicals are unsubstituted or are completely or partly substituted by fluorine;

R_1 is H or (C_1-C_4)-alkyl, which is unsubstituted or completely or partly substituted by fluorine;

n is 0, 1, 2, 3 or 4,

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wherein, if n = 2, 3 or 4, the substituents R are chosen independently of one another;

or a pharmaceutically tolerable salt or trifluoracetate thereof.

2. A compound as claimed in claim 1, wherein:

A is $(C_1$-$C_2)$- alkylene;

T is H or methyl;

B is a saturated or unsaturated carbon five-membered or six-membered ring;

Het is a 5- or 6-membered, saturated or unsaturated, heterocycle that contains up to three identical or different heteroatoms chosen from O, S, and N;

R is F, Cl, Br, iodine, amino, hydroxymethyl, OH, phenyl, CO_2R1, $(C_1$-$C_4)$-alkyl, or $(C_1$-$C_4)$- alkoxy,

wherein the alkyl radicals are unsubstituted or completely or partly substituted by fluorine;

R_1 is H or $(C_1$-$C_4)$-alkyl, where the alkyl radical is unsubstituted or completely or partly substituted by fluorine;

n is 0, 1, 2 or 3,

where, if n = 2 or 3, the corresponding substituents R are chosen independently of one another.

3. A compound as claimed in claim 1, wherein:

A is $(C_1$-$C_2)$- alkylene;

T is hydrogen;

B is a saturated or unsaturated carbon five-membered or six-membered ring;

Het is a 5- or 6-membered, saturated or unsaturated, heterocycle that contains up to two identical or different heteroatoms chosen from O, S, and N ;

R is F, Cl, Br, $(C_1$-$C_4)$- alkoxy, or $(C_1$-$C_4)$- alkyl,

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where the alkyl radicals are unsubstituted or completely or partly substituted by fluorine;

n is 0, 1 or 2, wherein, if n = 2, the corresponding substituents R are chosen independently of one another.

4. A compound as claimed in claim 1, chosen from:
exo/exo-(octahydro-4,7-methanoinden-5-yl)pyridin-3-ylmethylamine,
(rac)-exo/endo-(octahydro-4,7-methanoinden-5-yl)pyridin-3-ylmethylamine,
(+)-exo/endo-(octahydro-4,7-methanoinden-5-yl)pyridin-3-ylmethylamine,
(-)-exo/endo-(octahydro-4,7-methanoinden-5-yl)pyridin-3-ylmethylamine,
(rac)-exo/endo-(octahydro-4,7-methanoinden-5-yl)pyrazin-2-ylmethylamine,
(+)-exo/endo-(octahydro-4,7-methanoinden-5-yl)pyrazin-2-ylmethylamine,
(-)-exo/endo-(octahydro-4,7-methanoinden-5-yl)pyrazin-2-ylmethylamine,
exo/endo-(decahydro-1,4-methanonaphthalen-2-yl)pyrazin-2-ylmethylamine,
exo/endo-(octahydro-4,7-methanoinden-5-yl)thiophen-2-ylmethylamine,
exo/endo-(octahydro-4,7-methanoinden-5-yl)thiophen-3-ylmethylamine,
exo/endo-(3a,4,5,6,7,7a-hexahydro-3H-4,7-methanoinden-5-yl)pyridin-3-yl-methylamine,
exo/endo-(3a,4,5,6,7,7a-hexahydro-1H-4,7-methanoinden-5-yl)pyridin-3-yl-methylamine,
exo/endo-furan-3-ylmethyl-(octahydro-4,7-methanoinden-5-yl)amine,
exo/endo-furan-2-ylmethyl-(octahydro-4,7-methanoinden-5-yl)amine,
exo/endo-(decahydro-1,4-methanonaphthalen-2-yl)pyridin-3-ylmethylamine,
exo/endo-(octahydro-4,7-methanoinden-5-yl)-(1H-pyrrol-2-ylmethyl)amine,
exo/endo-(octahydro-4,7-methanoinden-5-yl)-pyrimidin-5-ylmethylamine, and
their pharmaceutically tolerable salts or trifluoracetates.

5. A compound as claimed in claim 1, chosen from:
exo/exo-(octahydro-4,7-methanoinden-5-yl)pyridin-3-ylmethylamine,
(rac)-exo/endo-(octahydro-4,7-methanoinden-5-yl)pyridin-3-ylmethylamine,

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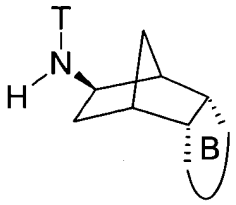
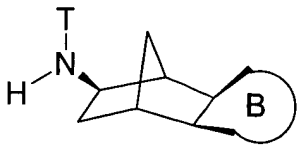
(+)-exo/endo-(octahydro-4,7-methanoinden-5-yl)pyridin-3-ylmethylamine,
(-)-exo/endo-(octahydro-4,7-methanoinden-5-yl)pyridin-3-ylmethylamine,
(rac)-exo/endo-(octahydro-4,7-methanoinden-5-yl)pyrazin-2-ylmethylamine,
(+)-exo/endo-(octahydro-4,7-methanoinden-5-yl)pyrazin-2-ylmethylamine,
exo/endo-(octahydro-4,7-methanoinden-5-yl)thiophen-2-ylmethylamine,
exo/endo-(3a,4,5,6,7,7a-hexahydro-3H-4,7-methanoinden-5-yl)pyridin-3-yl-methylamine,
exo/endo-(3a,4,5,6,7,7a-hexahydro-1H-4,7-methanoinden-5-yl)pyridin-3-yl-methylamine,
exo/endo-(decahydro-1,4-methanonaphthalen-2-yl)pyridin-3-ylmethylamine,
exo/endo-(octahydro-4,7-methanoinden-5-yl)-(1H-pyrrol-2-ylmethyl)amine,
exo/endo-(octahydro-4,7-methanoinden-5-yl)-pyrimidin-5-ylmethylamine, and
their pharmaceutically tolerable salts or trifluoracetates.

6. A process for the preparation of a compound as claimed in claim 1, comprising reacting a compound of the formula (II) or (II a)

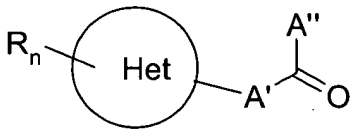


II



II a

with a compound of the formula (III)



III

in the presence of at least one reductant or at least one Lewis acid to give at least one compound of the formula (I) or (I a),

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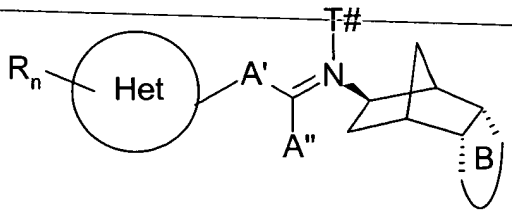
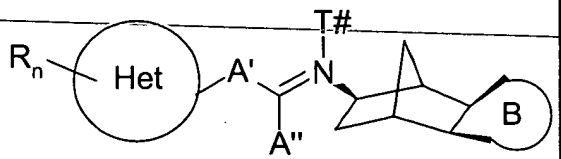
wherein, independently of one another, A' corresponds to a bond or (C_1-C_3)-alkyl, A" corresponds to H or (C_1-C_3)- alkyl, and A' and A" together with the carbon atom of the carbonyl group represent as many carbon atoms as A represents in formula (I) or (I a); and
optionally converting the compound of formula (I) or (I a) into a pharmaceutically tolerable salt or trifluoracetate.

7. A process for the preparation of a compound as claimed in claim 1, comprising isolating an intermediate of the formula (IV) or (IV a),

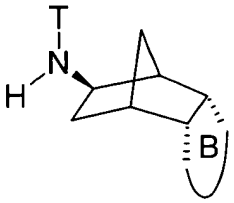


IV

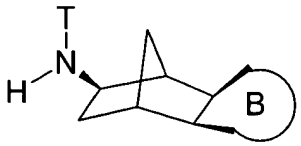


IV a

formed from reacting a compound of the formula (II) or (II a)

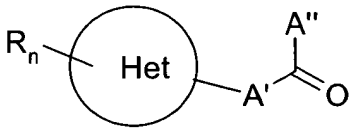


II



II a

with a compound of the formula (III),



III

and then converting the intermediate of the formula (IV) or (IV a) into a compound of the formula (I) or (I a) by using at least one reductant,

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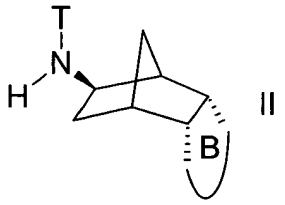
wherein T# is a free electron pair or (C_1-C_4)-alkyl, and

wherein a counterion is assigned to the iminium ion formed when T# is (C_1-C_4)-alkyl; and

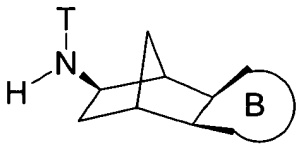
optionally converting the compound of formula (I) or (I a) into a pharmaceutically tolerable salt or trifluoracetate.

8. A process as claimed in claim 7, wherein the counterion assigned to the ammonium nitrogen formed when T# is (C_1-C_4)-alkyl is chosen from chloride and tosylate.

9. A process for the preparation of a compound as claimed in claim 1, comprising reacting a compound of the formula (II) or (II a)

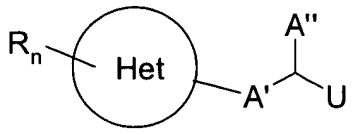


II



II a

with an alkylating agent of the formula (V) to produce a compound of the formula (I) or (I a),



V

wherein U is a nucleophilically substitutable group and wherein, independently of one another, A' corresponds to a bond or (C_1-C_3)- alkyl, A'' corresponds to H or (C_1-C_3)- alkyl, and A' and A'' together with the carbon atom which

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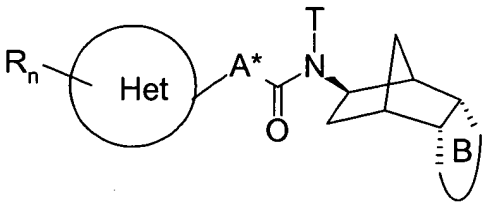
U is bonded represent as many carbon atoms as A represents in formula (I) or (I a); and

optionally converting the compound of formula (I) or (I a) into a pharmaceutically tolerable salt or trifluoracetate.

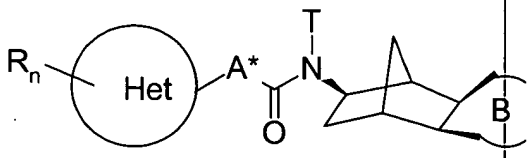
10. A process as claimed in claim 9, wherein U is chosen from halogen atoms, alkylsulfonates, and arylsulfonates.

11. A process as claimed in claim 10, wherein U is chosen from Cl, Br, I, mesylate, and tosylate.

12. A process for the preparation of a compound as claimed in claim 1, comprising reducing carboxamides of the formula (VI) or (VI a) to the corresponding amines of the formula (I) or (I a),



VI



VI a

wherein A* corresponds to a bond or (C_1-C_3)-alkyl, and

optionally converting the compound of formula (I) or (I a) into a pharmaceutically tolerable salt or trifluoracetate.

13. A process for the preparation of a compound as claimed in claim 1, comprising alkylating a compound of the formula (I) or (I a), in which T corresponds to hydrogen, using alkylating agents of the formula (VII),

T*—U VII

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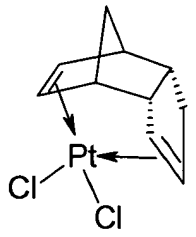
wherein T* is (C_1-C_4)- alkyl and U is a nucleophilically substitutable group, such that tertiary amines result from this reaction; and
optionally converting the compound of formula (I) or (I a) into a pharmaceutically tolerable salt or trifluoracetate.

14. A process as claimed in claim 13, wherein U is chosen from halogen atoms, alkylsulfonates, and arylsulfonates.

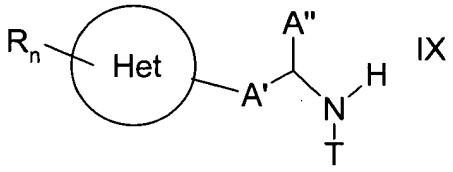
15. A process as claimed in claim 14, wherein U is chosen from Cl, Br, I, mesylate, and tosylate.

16. A process for the preparation of a compound as claimed in claim 1, comprising reacting a dicyclopentadienylplatinum complex of the formula (VIII)



VIII

with amines of the formula (IX),



IX

and subsequently reducing the intermediate formed to a compound of the formula (I) or (I a)

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wherein, independently of one another, A' corresponds to a bond or (C_1-C_3)-alkyl, A" corresponds to H or (C_1-C_3)-alkyl, and A' and A", together with the carbon atom to which the nitrogen atom is bonded, represent as many carbon atoms as A represents in formula (I), and
optionally converting the compound of formula (I) into a pharmaceutically tolerable salt or trifluoroacetate.

17. A method for the treatment or prophylaxis of a disorder of the respiratory drive, comprising administering to a patient in need thereof a compound as claimed in claim 1.

18. A method according to claim 17, wherein the disorder of the respiratory drive is a sleep-related respiratory disorder.

19. A method according to claim 18, wherein the sleep-related respiratory disorder is sleep apnea.

20. A method for the treatment or prophylaxis of snoring, comprising administering to a patient in need thereof a compound as claimed in claim 1.

21. A method for the treatment or for the prophylaxis of acute or chronic kidney disorders, comprising administering to a patient in need thereof a compound as claimed in claim 1.

22. A method according to claim 21, wherein the acute or chronic kidney disorder is chosen from acute kidney failure and chronic kidney failure.

23. A method for the treatment or prophylaxis of disorders of the intestinal function, comprising administering to a patient in need thereof a compound as claimed in claim 1.

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24. A method for the treatment or prophylaxis of disorders of the bile function, comprising administering to a patient in need thereof a compound as claimed in claim 1.

25. A method for the treatment or prophylaxis of an ischemic condition of the peripheral or central nervous system, or an ischemic condition due to a stroke, comprising administering to a patient in need thereof a compound as claimed in claim 1.

26. A method for the treatment or prophylaxis of an ischemic condition of a peripheral organ or a limb, comprising administering to a patient in need thereof a compound as claimed in claim 1.

27. A method for the treatment of a state of shock, comprising administering to a patient in need thereof a compound as claimed in claim 1.

28. A method for use in a surgical operation or an organ transplantation, comprising administering to a patient in need thereof a compound as claimed in claim 1.

29. A method for the conservation or storage of a transplant for surgical measures, comprising administering to a patient in need thereof a compound as claimed in claim 1.

30. A method for the treatment of a disease in which cell proliferation is a primary or secondary cause, comprising administering to a patient in need thereof a compound as claimed in claim 1.

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31. A method for the treatment or prophylaxis of a disorder of lipid metabolism, comprising administering to a patient in need thereof a compound as claimed in claim 1.

32. A method for the treatment or prophylaxis of attack by an ectoparasite, comprising administering to a patient in need thereof a compound as claimed in claim 1.

33. A composition, comprising at least one compound as claimed in claim 1 and a carrier.

34. A pharmaceutical composition, comprising at least one compound as claimed in claim 1 and a pharmaceutically acceptable carrier.

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